

PORTLAND

ATARI CLUB

Next General Meeting

Monday, May 5, 1986, at 6:30 p.m.
Northwest Service Center
1819 N.W. Everett St.

PAC Bulletin Board Systems
24 Hours - 7 Days a Week

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In This Issue

President's Column, Vern Vertrees.....	1
Editor's Column, R. DeLoy Graham.....	3
Board Meeting Notes, Dan Gibson.....	4
Membership Notes, Jim Miller.....	4
Special Interest Groups, Tom Brown.....	5
Explorer's SIG, Wayne Winterbottom.....	5
PAC Help Hotlines.....	5
Atari in the News.....	6
Annual Computer Show, Chuck Hall.....	6
European Atari Report, Gigi Bisson of ANTIC....	8
Assembler Lesson 7, Chris Crawford.....	10
Transylvannia / Crimson Crown, Jim Miller.....	12
Newsletter Help Wanted, Steve Billings.....	12
Alternate Reality User Group Formed, K. Leeds..	13
Planetfall, Kevin Roethe and Peter Hoesly.....	13
Super Boulder Dash, Steve Billings.....	14
Classified Ads.....	14
AtariWriter+ Printer Driver for S610, B. Zinn..	15
BASIC XE Notes, OSS BBS.....	15
ST SIG News, R. DeLoy Graham.....	17
Personal Pascal: Hints, Notes & Bugs, Bob Re...	18
Personal Pascal Corrections, OSS BBS.....	18
Why Pascal? R. DeLoy Graham.....	19
SOLAPAK, R. DeLoy Graham.....	20
Dealer's Corner.....	BC



PORTLAND ATARI CLUB

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Membership is \$20 per year and includes a subscription to this newsletter and access to members-only functions. Single copy price of the newsletter is \$1.50. General meetings are open to the public and start at 6:30 p.m. on the 1st Monday of each month (2nd Monday in the case of holidays) on the date and at the location listed on the cover of this newsletter.

Exchange newsletters, articles, correspondence and ads should be sent to the following address:
Portland Atari Club, Attention: (appropriate board member), P.O. Box 1692, Beaverton, OR 97005

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PRESIDENT'S COLUMN

Vern Vertrees

How do you spell relief? I think you spell it North West Service Center, or unanimous vote, or even Elanna Schlichting for her great effort and research in locating a new meeting place. However you spell it, it came at our meeting in the form of a unanimous vote from those of you who were in attendance. I thank you for that. Now we can get down to the business of enjoying what we like best, our Atari computers.

I am excited about our new meeting place for several reasons. We now can have sales from all of our members, whether they be dealers or just members wanting to sell something they no longer need. We can also invite computer related companies to show and sell their products at our meeting. This could be exciting. As you know, we have grown as a club to almost six hundred (596) family memberships. If we were to be conservative and figure just three people per family, that would mean 1,788 individuals. Wow! Where would we put all of you if we all got together at once. Any way, my point is that we have on occasion filled up our 500 seating capacity at BPA. At our new meeting place we can seat at least 800. They have seated 900 there on occasion but it was a bit crowded. Elanna is preparing a map for this news letter along with the bus route to make it easy for you to find it for the first time. I hope you will all come to our next month's meeting so we can try it out.

For those of you who missed this April's meeting, we found out there really is a Mr. X from Washington _____. He gave us a demo of **SPY vs. SPY** while dressed in a white trench coat with a white wide brim hat. Then during his demo, he was fired upon by a sleet creature dressed in a black trench coat and wearing a black hat. The demo ended with a chase and a shoot out.

After our break, Pat Warnshuis showed us the system that he has installed in all of the hospitals in Portland. This system, consisting of an 800XL, a Commodore monitor, and a Prometheus modem, links the hospital emergency rooms together. The program Pat wrote is in cartridge form to simplify its use. It keeps track of which emergency room staff and services are available at each hospital. When an accident occurs, the emergency service, whether it be life flight, an ambulance, or a rescue unit, is able to find out immediately where to take the victims. What a great feeling it is to know that Atari computers are saving lives right here in Portland.

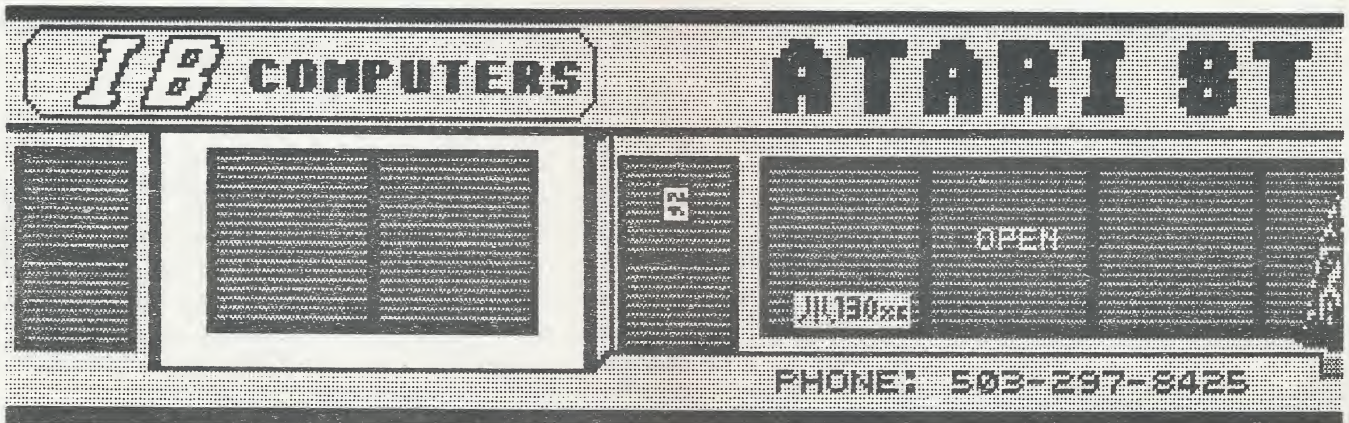
We had another demo lined up but ran out of time, so it was held over for our next meeting.

Speaking of our next meeting, I think Jim said something about it being a GHOSTLY experience. Hmm, I wonder what he means by that. I guess we will find out next month.

As most of you know, I had great concern over the issue of the ST dividing our club. I feel that we must not let this happen. I have been listening to all of you to get your feelings on this matter. I hear from some of you that you feel the 8-bit is being neglected at the meeting, and that our newsletter has too many articles on the ST. I have tried to look at these two matters objectively, and at this point in time I feel that in both cases we have been pretty fair. For a long time we went without any articles from the ST group and then when we did get some they seemed to come all at once. As you know, we count on all of you for the articles and reviews for our newsletter. When they don't come, we have to fill the pages with something from another source. If everyone just sits back and waits for someone else to do something, nothing will ever get done. My feeling is that if one month we don't have enough on the 8-bit computer to satisfy you then give us a contribution for the next one. It doesn't take much time to write a review or to share a helpful hint or idea you would like to pass on. I see them all of the time on our BBS. You must remember, however, that not everyone has a modem. Many people miss a lot of what is going on. I know a lot of you have something that you could share with all of us.

Along this same line, I have seen that our Atari magazines are having the same growing pains. They have also tried to be fair about it by not reducing the coverage on the 8-bit while giving the ST the coverage it deserves. They have done this by adding to the size of their magazines. We may have to do this in our own newsletter in the future, but for the time being we will try to be as fair as possible. As for the meeting, we are trying to keep it in perspective also. Those of you in attendance this month saw some great things on the 8-bit and nothing on the ST. I have tried to have something on both at each meeting, and I will work at being fair.

(continued on the next page)



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(PRESIDENT'S COLUMN, continued from page 1)

You have heard the old saying "You've come a long way, baby". Well, that's about the way I feel. Two years ago, who would have thought we would have a 1 meg Atari. I know that I was still wanting a 64K Atari. I now own two 1 meg computers sitting side by side on my desk -- an upgraded 130XE and 520ST. I'm not bragging, just proud of both. I have no intention of giving up my 8-bit computer. It brings me pleasure and always a new challenge. Time moves on and so indeed does the computer industry. Two years from now the ST could be obsolete and I would hope that ATARI would be the leader in even another computer innovation. I only bring this up to make this point. We all own an Atari computer which we can be proud of and get a great deal of pleasure from, so let us, as an Atari club, support and enjoy them all.

To move on to a new subject, we have a computer show next month in Portland. We will have our club booth in the show again this year

and like last year we will probably be the main attraction. We got a lot of good help from all of you last year and are counting on you again. Chuck Hall is in charge of the show this year and has asked for help to man the booth. If you can help, give him a call or sign up at our next meeting. If you have never worked at the booth, I would encourage you to do so. It is both exciting and rewarding. You don't have to be versed in all aspects of computing, just be there to answer questions about what our club has to offer and what it has done for you. Please consider it and, if you can, give us a hand.

I would also ask all members to think about what you could contribute to our meetings. What are you doing with your Atari that might be of interest to us all. Have you written a program that you would like to show us? Or do you use your computer in a special way that would be of interest to us? I would sure like to hear from you.

For this month, Happy Computing!

EDITOR'S COLUMN

R. DeLoy Graham

Albert Einstein wrote, "A life of service is the only kind of life worth living." Gandhi said something similar: "Man becomes great exactly in proportion to what he does for other people, and to what he gives other people."

I don't know about you, but when I joined the Portland Atari Club, my primary interest was selfish; I wanted to obtain some cheap software and keep up on useful information about Atari Corporation and Atari products. However, as a former member of Eugene ACE, I knew full well the value of a user's group. While a member of ACE, I learned how to program in FORTH at no cost from Charlie Andrews, who gave freely of his time and talents; I gained many tips about 6502 assembly language programming from several members of their assembly language SIG; and I made many friends who had similar interests and concerns.

But I actually gained the most from ACE by my own participation and sharing, either by writing articles for their newsletter or by working with the members of their Education SIG. The more I shared, the more I benefitted. So when I joined PAC, I knew if I were to really profit from my membership that I would have to become involved in its primary purpose -- that of providing information, help, and training to others. It may seem ironic, but if we approach our club with a selfish attitude (what's in it for us?), we will probably not get much out of our membership. On the other hand, if our attitude is one of sharing (what can we do to help?), we will surely gain a great deal. As a professional teacher, I have long known that the teacher learns far more than his or her students. As we share through our participation in special interest groups, by demonstrating software at meetings, by answering questions at the meetings or on the bulletin board, or by submitting articles to the newsletter, we ourselves gain the most, while at the same time making the membership of all others in the club more worthwhile.

Now that I am learning the ins and outs of being the editor of the PAC Newsletter, I would like to share with you some of my concerns. The newsletter is a collection of articles which we can categorize as follows: reports from members of the board of directors and from SIG leaders, software reviews, how-to articles, and news and rumors about Atari and its products. Besides regular submissions from board members and SIG

leaders, we receive frequent submissions from members of the Newsletter SIG and occasional articles from other members of the club. Beyond these, we sometimes reprint articles from some of the exchange newsletters we receive from other clubs around the country. I usually make the final decision about what articles to reprint, but I do so based on what seems to be of interest or of value to the members of the club in general. I must retype these articles, so I don't make these decisions lightly.

Since we do not pay for submissions to the newsletter, we must rely on each other to provide timely, interesting, and informative articles for publication. Getting articles from board members is no problem; they are required to submit articles as officers of the club. However, getting articles from the general membership is difficult. May I address two of the reasons why **you** may be holding back? Some people have expressed a concern about writing ability (or lack of it). I will simply say that the ideas and information you have are what's important. It is up to me and other members of the editorial staff to help you communicate your ideas.

A second concern I often hear is that others probably already know what we have discovered, or that what we have to share has been written about before. My response to this type of thinking is that, although it may be true that some do already know what we have discovered, many do not. Someone will benefit from our discoveries. No article will be of interest to all readers, but we are a big club, with close to 600 families receiving the newsletter. One thing that I have learned since I bought my first Atari 800 in 1981 is that no matter how much we learn about our computers, there is always more to learn; no matter how efficient a segment of code is, or how amazing its results are, someone else will produce something more efficient or more amazing sooner or later. But we are all at different steps on the learning ladder. And besides, there are too many rungs on the ladder for any of us to be able to say we have covered them all. Consequently, we each specialize in certain areas and become somewhat proficient in those areas. That knowledge we should share, and if we do we will benefit as much as anyone. Writing forces us to organize our thoughts and makes the concepts much clearer to ourselves.

Please share your discoveries with us!

BOARD MEETING NOTES

Dan Gibson

The March Board Meeting was held at 7 p.m. on March 31st at IB Computers. Attending were the following: Chuck and Jean Hall, Dan Gibson, Tom Brown, Jim Miller, Steve and Debbie Billings, Tom Addis, Elanna Schlichting, Jerry Andersen, DeLoy Graham, Jim Berry, William Gammon, Steve Colton, and Vern Vertrees.

APRIL MEETING

The April general meeting will begin at 6:30 with PAC software sales until 7:00 when the main meeting will start. First off, the Board members will give a brief update on their respective areas. Then the SIG group leaders will tell us what each of their groups are doing and when they are meeting.

The business part of the meeting will continue to center on the question of where we will hold our monthly meetings. There was a motion made at the March general meeting that the Board consider the ideas presented and report back on its findings at the April meeting. The Board is recommending that we move our general meeting to the Northwest Service Center located at 1819 N.W. Everett St. It has a separate room for sales, both used and commercial; parking should not be a problem; it is centrally located and close to freeways; it is big enough; and it has a good sound system.

The facility will cost us around \$975 per year. To pay for the new location we will dedicate disk sales for only this purpose. A motion was made and passed that all persons will continue to wear name tags at the meeting and that only members of the PAC will be permitted to sell at the meeting.

The entertainment part of the April meeting will feature a demonstration of **Spy vs. Spy II** by Mr. X. Pat Warnshuis will tell us about the program he developed for local hospitals that network them to a central data base and advise which hospital has what emergency facilities available at any given time. Chuck Hall will update us on the CBSI show coming May 8th thru 10th. We need volunteers for 2 to 3 hour shifts.

(continued in right column)

MEMBERSHIP NOTES

Jim Miller

It was great to see the response to the new meeting place at the NW Service Center. See you all there next month!

I wish to welcome the following new members and families to the PAC:

David Skinner

Robert Freund

David Duncan

Ken Brace

Gary Robinson

Richard Starkweather

EuVeane Gernhart

Richard Goldie

Jack Bentley

Roger Christal

Judith Bentley

Charles Aili

Andrew Wilson

Michael McHugh

Rev. Kevin Satterlee

Megasoft LTD.

Jess Kimmelsbach

Allen Haywood

Lou Albert

Stan Miller

Jay Foster

Terry Sotfin

We now have a total of 586 members.

Does anyone know how to port **SynFile** files over to the 520ST so they can be converted to **dBASE II** or **dBASE III** format? Please let me know if you do.

MISCELLANEOUS

The Board Passed a motion to cancel American Network long distance service because it was not being used. A motion was passed that all purchases by the club over \$100 be done on a bid process with the board choosing the best deal among the bids. The rules for bidding will be decided by a special committee.

TREASURER'S REPORT

As of this writing, the balance in our checking account stands at \$1,323. At the last meeting software sales totaled \$252 and memberships brought in \$540.

SPECIAL INTEREST GROUPS

Tom Brown

BUSINESS APPLICATIONS SIG

Dates: 1st & 3rd Wednesdays
 Time/Place: 7:00 p.m. / Beaverton HS, Room 129
 Leaders: Tom Brown / Ron Chaffer
 Phone: 646-5237 / 283-5691

BEGINNER'S ST SIG

Dates: 1st & 3rd Thursdays
 Time/Place: 7:00 p.m. / Tektronix, Bldg 47
 Leader: Richard Barhitte
 Phone: 206-573-0299

ADVANCED ST SIG

Dates: 2nd & 4th Thursdays
 Time/Place: 7:00 p.m. / Tektronix, Bldg 50
 Leader: Pat Warnshuis
 Phone: 246-3724

PASCAL/MODULA-2 SIG

Dates: 2nd & 4th Wednesdays
 Time/Place: 7:00 p.m. / Beaverton HS, Room 129
 Leader: Tom Cloyd
 Phone: 643-9192

MODEM & COMMUNICATIONS SIG

Dates: 2nd & 4th Mondays
 Time/Place: 7:00 p.m. / Call
 Leader: Jerry Anderson
 Phone: 655-3914

EXPLORER'S SIG

Dates: 2nd & 3rd Tuesdays
 Time/Place: 7:00 p.m. / Call
 Leaders: Tom Comerford / Wayne Winterbottom
 Phone: 246-4694 / 669-1367

ASSEMBLER SIG

Dates: 1st & 3rd Tuesdays
 Time/Place: 7:30 p.m. / Call
 Leader: Clyde Pritchard
 Phone: 648-0461

NEWSLETTER SIG

Date: Wednesday following general meeting
 Time/Place: 7:00 p.m. / Call
 Leader: R. DeLoy Graham
 Phone: 649-6993

The Business Applications SIG will be expanding its activities in the coming weeks, starting with **dBMAN**, a relational database management system for the ST. For information on SIG activities, call SIG leaders or Tom Brown.

EXPLORER'S SIG
Wayne Winterbottom

As usual, the Explorers met twice in March. We had a demonstration of screen dumps by Randal Leong. Screen dumps are used to make a hard copy of what is on the screen, whether it be graphics or text. Randal demonstrated **Print Wiz** by Allen Macroware, **Magna Print** by Alpha System, and **K-Dump**, which is in the public domain. At the second meeting we were going to have a demonstration of **SynCalc**, but we could not find anyone who knew enough about **SynCalc** to demonstrate it. We are still looking for someone to show us **SynCalc**. If you have worked with **SynCalc** enough to show its features, we would like to have you join us one evening. Call Tom C. or Wayne W. We instead had a discussion about the questionnaires passed out at the previous meeting. Also, Elanna Schlichting showed a game called **GhostBusters** by Activision.

For the new members who are not aware of what the Explorer's SIG does, here is a short description. We have two meetings every month on the 2nd and 3rd Tuesdays at 7:00 p.m. PAC members demonstrate software, hardware, and many other functions with the Atari. There are people to talk with about your problems or questions. We are constantly learning more about our computers at the Explorer's SIG.

In previous meetings we have looked at modems, DOS functions, **Print Shop**, **SynFile**, disk format, utility programs, **Atari Writer**, screen dumps, **Disk Wiz**, **Paperclip**, PAC Board functions, educational programs, **Disk Keeper**, and many more.

Participate in your CLUB--come enjoy a SIG.

PAC HELP HOTLINES

Adventure Games	Russell Schwartz	646-6418
Assembly Language	Leroy Baxter	653-1633
BASIC Programming	Nick Yost	981-0838
	Lee Gassaway	642-2455
BBS Usage	Steve Billings	246-1751
	Don Adams	245-7168
	Russell Schwartz	646-6418
C	Randal Schwartz	285-5764
Cassette Operation	Lee Gassaway	642-2455
FORTH Programming	Ron Chaffer	283-5691
	Ricky Wooldridge	224-7163
Operating System	Nick Yost	981-0838
	Leroy Baxter	653-1633
ST Advanced	Chuck Hall	626-3717
ST Fundamentals	Richard Barhitte	206-573-0299

ATARI IN THE NEWS

From Schooltechnews, March 1986, page 6:
"ATARI/CCC LINK -- Computer Curriculum Corp. (CCC) is using Atari's 520 ST micro as a workstation to deliver CCC's computer assisted courses. Each workstation, which includes four Atari programs, costs between \$2,000 and \$3,000. The CCC computer that delivers the instruction costs \$30,000. The linkage takes advantage of the ST's color, graphics, and speed in presenting CCC material and also allows schools to run other software."

From Classroom Computer Learning, April 1986, page 28: "The sophisticated 520ST system lists for under \$900, **including** a color monitor. (The Amiga costs twice as much, and the monochrome Apple Macintosh lists at three times the price.) One computer graphics expert, who worked with both color machines in an attempt to decide which computer to support, concluded that 'the Atari 520ST does almost as much as the Amiga, but at half the price.' Atari is aiming its machine at 'the computer user who wants to trade up to a 16-bit system,' and if sufficient educational software becomes available . . . , many of the traders-up will likely be schools."

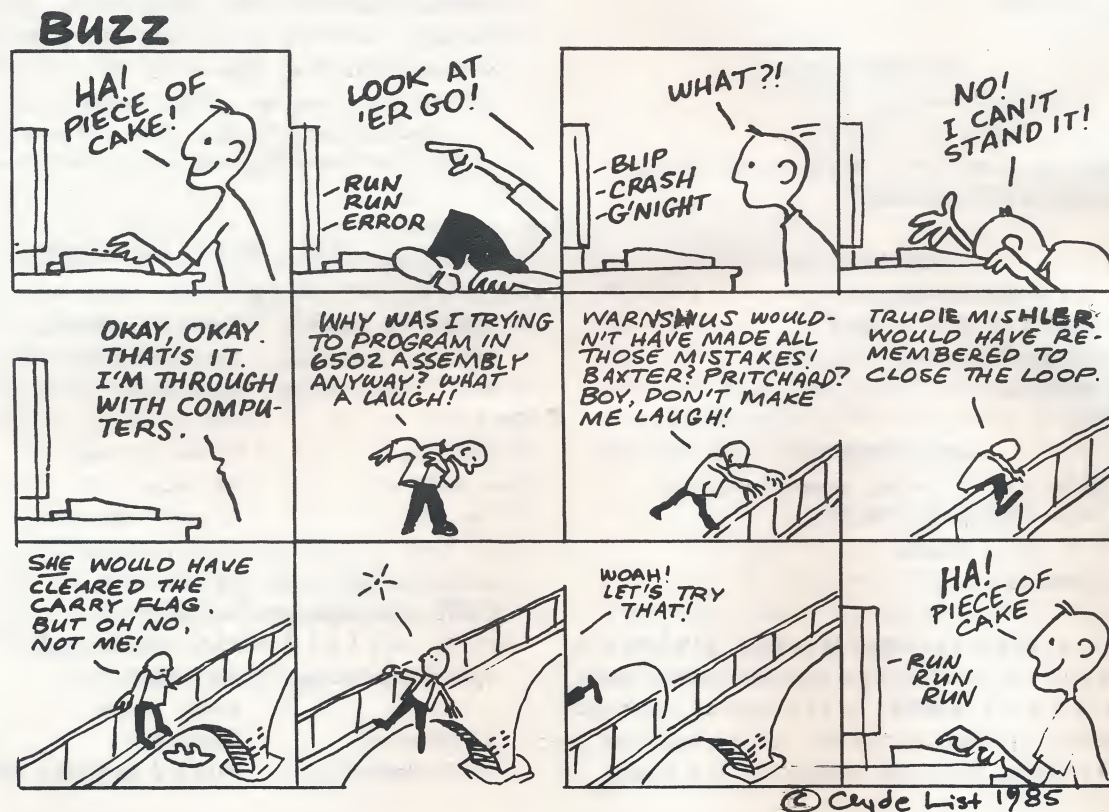
ANNUAL COMPUTER SHOW

Chuck Hall

I would like to thank all of those who came up and volunteered to help out at the show this year. For those of you who missed the meeting, the show is being held May 8, 9, & 10, at the Memorial Coliseum. The hours are from 11:00 a.m. to 9:00 p.m. each day. This differs from past years in that the show is being held Thursday, Friday and Saturday. We will work each day in four shifts: 11 a.m.-1 p.m., 1-4 p.m., 4-7 p.m., and 7-9 p.m. I will have the schedule posted at the next meeting, and will also personally contact each of you who have signed up.

It looks to be a great show for Atarians this year. There will be several dealers there with Atari and related products including Computers Etc., Computron, IB Computers, and of course our friends from San Jose, Best Electronics. If you saw their booth last year, you know what to look for this year. One item which I think will be hot again this year will be printers. Look for prices to be below \$200 on the low end machines (SG-10, 1091's, etc.), plus if the trend continues from last year, 1200 modems should be well under \$200 this year.

Be sure to stop by the booth and say hello. Last year we were the most popular booth at the show. We hope to be able to make it so again.



COMPUTER

& Business

Systems

EXPO

May 8, 9, 10

11 am - 9 pm

Memorial Coliseum

by Esprit Promotions

EUROPEAN ATARI REPORT

Gigi Bisson of ANTIC

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Part 1: London Bulletin

Real MS-DOS compatibility is finally a reality for the Atari 520ST. At an Atari computer show sponsored by Atari User magazine in London, Atari Corp. unveiled a product in the final development stages code-named the MS-DOS Box.

Designed by Atari engineer Jim Tittsler, the MS-DOS box is essentially an 8088 microprocessor encased in a metal box like a hard disk drive and plugged into the DMA port. It comes with half a megabyte of memory, an 8088 microprocessor and a socket for the 8087 math co-processor.

During a tour of three major European computer shows including the Hanover Fair in West Germany, Antic publisher Jim Capparell saw the ST running MS-DOS and Multiplan. Atari Corp. claims the MS-DOS box will enable the ST to be compatible with 90% of IBM-PC software at speeds greater than the IBM PC. However, Tittsler says the box won't be able to run graphic-based software such as Lotus 1-2-3 until the final BIOS routines are written.

The MS-DOS box also offers significant potential for true multi-tasking ability or high-speed graphics on the ST. By using the 8088 and 8087 as co-processors for the ST, there is a possibility of using them to process data for graphic screens while doing a separate task with the 68000 microprocessor. The projected retail price is about \$300.

Atari also announced a CP/M operating system emulator in software that should soon be available in the United States for \$49.95. At the London show, Antic saw libraries of CP/M software already transferred to ST disk format.

PRODUCTS AND PROMISES

For the eight-bit Ataris, the most significant new product was the long-promised 80-column adapter that plugs into the XL or XE computer. Atari had originally promised an 80-column cartridge, however, the final product will be a case that plugs into the serial port.

There was an array of new software including a computer chess program, sophisticated animation software, and a \$3,000 Computer Aided Design system for the 1040ST suitable for professional architects and interior designers. Antic saw a variety of C development tools, editors, and loads of music and entertainment software.

Atari User magazine claimed that the Atari Computer Show, March 5 at the Novotel, London was the first Atari-specific exhibition ever. Antic was among 50 booths dedicated to Atari ST, XL and XE. Over 100 new products were unveiled and according to Atari User magazine, approximately two thirds of the products on display were for the 8-bit Atari computers. However, most of those products were aimed at the U.K. market, such as Atari's release of the XC11, a replacement for the 1010 cassette deck to be bundled with the 130XE.

Computer Concepts from Hempstead, England showed a preliminary version of what Antic Marketing Director Gary Yost calls "the fastest BASIC I've seen on any machine." This remarkable ST BASIC supports in-line assembly code and key words for every GEM function call. It retails for less than \$100 in cartridge form, and should be available in the early Fall.

Software Punch of Liverpool showed a small plug-in card for the ST that gives it two RS-232 ports and sells for about 50 British pounds. The software house is working on an Ethernet-compatible network of cables that allow ST computers to share information.

For three solid days, Jeff Minter, the wild-haired, 23-year-old president of Llamasoft demonstrated his creation, the Colourspace light synthesizer. A BARCO video projection system beamed his pulsating kaleidoscopic images on an 8-foot diagonal screen. Jeff's mom was staffing the booth, selling his ST Colourspace to eager crowds. The \$29.95 program is available in the U.S. through Apex Distribution in Boston, Mass.

Recently Minter rented London's Baker planetarium to demonstrate Colourspace to the press. Not surprisingly, in the Colourspace manual, he cites as his influences, "Pink Floyd, Rush and Laserium." (A popular laser light show that appears in planetariums.)

Metacomco will port a full implementation of Cambridge LISP to the ST and is aiming for a Fall release of the promised product.

Supra Corp. of Albany, Oregon was showing their 20 megabyte hard disk. (It should be available from local retailers in the near future). The \$1,000 price seems a bit steep, but it is reportedly three times faster than the not-yet-available Atari hard disk. John Wiley, President of Supra, showed Antic a 60 megabyte hard disk prototype and hinted about a future streaming tape backup.

Mirrorsoft announced Fleet Street Editor, a word processing and graphics page layout program that functions like Springboard's Newsroom on the Apple II, but produces "professional level" desktop publishing and photocomposition on the ST. Look for Fleet Street Editor to hit the U.S. this summer. Microdeal announced Disk-Help, a \$29.95 disk recovery program.

Miracle Technology Ltd. of England was showing Multi-Viewterm/Datatari, an 8-bit communications program and serial interface capable of accessing graphic-based videotext, electronic mail, and telex. The interface is equipped with a 25-way plug to fit several modems.

TRANS-ATLANTIC SOFTWARE

Perhaps the most significant trend in software is the increasing communication between European and American software houses. Much of the software displayed was American product brought to the U.K. under license or by aggressive dealers. For example, the United States-based Michtron linked up with the United Kingdom firm of Microdeal to distribute Timebandit and Mi-Term in Europe. Likewise, U.S.-based distributors were searching for European software to bring back to the states.

The ST is already cracking the European education market. Universities are adopting the ST as the machine of choice. Fortran 77, long a standard in universities, is finished from two companies -- Philon of New York and Prospero in the U.K. With GEM bindings included, the Prospero version should retail for about \$150. Fortran in

one standard or another has been around since the late '50s and as a result a library of Public domain Fortran-compatible software for engineering applications is already available.

At the current exchange rate, the Apple Macintosh costs \$4,000 in the U.K. Not surprisingly, the ST is eating it up. Atari is holding the price of ST to roughly the U.S. equivalent. European programmers and dealers were quick to recognize the ST's incredible price/performance ratio.

Part Two: West Germany and France

HANOVER, WEST GERMANY -- No hype. It's the largest computer trade show in the world. CeBIT -- even grander than the mighty COMDEX. (CeBIT is a German acronym for World Center for Office, Data and Communications Technology.) During the week of March 12, the annual show in Hanover, West Germany boasted 2,100 exhibitors spread throughout 205,000 meters of display area in 13 buildings. Atari Corp. was in building 13, but this time it was a lucky number. "We've been hearing that the Atari ST is now the largest selling computer in Germany, but I never believed it until I saw this show," says Antic Publisher James Capparell. Every significant hardware and software organization from Atari to IBM was at the Hanover show, including 102 exhibitors from the U.S. and exhibitors from countries that aren't often associated with high technology, such as Czechoslovakia, Yugoslavia, Hungary and South Africa.

At a Hanover press conference, Atari announced the MS/DOS box, 20 megabyte hard disk drive, 1040ST computer and 520ST+ computer. Atari also spoke of their commitment to upward compatibility, pledging that all future plug-in peripherals and add-ons will be compatible with all versions of ST hardware. Atari engineers are working on a 1,000 X 1,000 pixel color monitor for CAD/CAM purposes, with a companion hardware expansion unit capable of driving that resolution on the ST. Atari hopes to keep the price down to \$1,000. Atari Corp.'s \$49.95 CP/M operating system emulator software is not yet available in the U.S., but apparently it is already in use in West Germany.

The trip verified both Atari's commitment to worldwide ST marketing, and the world's commitment to Atari.

ASSEMBLY LANGUAGE COURSE
Lesson Seven: Interrupts
Chris Crawford

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We now approach one of the most difficult topics in the world of assembly: interrupts. This is such a messy topic that very few high-level languages make any provision for interrupts. Moreover, interrupts are one of the best ways around crash your program hard. Programmers using interrupts must be very careful.

The standard way to handle this problem is with a technique called polling. Your program runs out every now and then to check whether the high-priority situation has arisen. If it has, then the program responds to it. If not, it returns to its original work.

The problem with polling arises from the choice of polling interval. If you choose a long (infrequent) polling interval, then you may not respond to a demand quickly enough. If you choose a short (frequent) polling interval, then you will respond quickly to the demand, but you will never have any time for your regular computations.

You may think this type of situation is infrequent, but I can list quite a few situations where this is fairly common. Most I/O operations involve short bursts of computation at infrequent intervals, but they must be attended to on a tight schedule. For example, talking to a cassette deck involves very little real work from the CPU, but it must be done according to a precise schedule.

Even a disk drive is very slow by the standards of a 6502. Or how about keyboard response? When the human operator presses a button, he wants to see response NOW, not two or three seconds from now. Yet he could press that button at any time. So should your program sit on its hands waiting for a keypress, or should it ignore the human operator?

The solution to all of these problems is the interrupt. An interrupt is rather like a subroutine that can be called by a hardware action. There's a wire going into the 6502 called IRQ (Interrupt Request). That wire is normally quiet. But when something important happens, like a keypress, the computer's hardware puts a signal on that wire to interrupt the 6502. Here's what happens next:

The 6502 is busy running a program, but when it gets the interrupt signal it first checks the 1-bit (Interrupt) in the processor status register. If the 1-bit is set, it decides to ignore the interrupt, but if it is clear, it proceeds to the next step. It saves the processor status register and the current value of the program counter onto the stack.

Then it loads the program counter with the address stored at a special place in ROM -- it's either \$FFFC or \$FFFE, I can never get it straight. It thus jumps to the address specified in ROM. It expects to find an interrupt service routine there, which presumably will deal with the keypress in the appropriate manner.

This routine will probably start by pushing A, X, and Y into the stack to preserve them. When done, the routine will then pull them off the stack and execute an RTI instruction, which causes the 6502 to pull the processor status register off the stack, and then pull the program counter off and resume operating.

The important thing about this rather complex sequence is that it allows the 6502 to drop whatever it is doing, service the interrupt, and then return to its earlier functioning without skipping a beat. The overriding goal of all this is to be absolutely certain that, when the 6502 returns from the interrupt, it returns in **EXACTLY** the same state that it was in when the interrupt hit. Otherwise, all sorts of horrible, untraceable bugs would result.

Imagine -- you're in the middle of some huge computation when an interrupt strikes. It subtly changes some very tiny parameter, just enough to insure that when the computation resumes, it will be slightly incorrect. When you try to find the bug, you discover that sometimes the code works perfectly and sometimes it fouls up, and you can't figure out why it should do that. Very bad business!

Moral: interrupts must follow a very tight discipline if they are to be of any utility.

Now let's get into some of the technical gore involving interrupts. First, there are two interrupts on the 6502. They are called IRQ (Interrupt Request) and NMI (Non-Maskable Interrupt). The idea is that the IRQ can be masked out by setting the 1-bit with the SEI instruction. Then you use the CLI instruction

to clear the 1-bit. Thus, IRQ is used for interrupts that have second priority.

NMI is reserved for first-priority interrupts -- it is not maskable. However, the designers of the Atari computers routed IRQ and NMI through the POKEY and ANTIC chips respectively. And they put mask registers into these chips. Thus, the NMI can be masked out after all -- but only on Atari computers. Other 6502-based computers don't allow that.

The NMI and IRQ interrupts have separate interrupt vectors in ROM, so they can be treated differently. These vectors route the interrupts to the OS, but the OS is smart enough to route interrupt flow through some RAM locations. This means that you can intercept these two interrupts by altering the contents of the RAM-vectors. (I won't list them here; there are a number of them for different situations.)

You must be careful, though, when altering such a RAM vector. What happens if an interrupt strikes after you have changed one byte of the address and before you have changed the other byte? The 6502 will fly off into never-never land and you have crashed. Sure, it's unlikely, but good programmers don't count on luck to make their programs work. You have to guarantee that the interrupt won't occur before you mess with the vector. Use SETVBV from the OS.

The two primary applications of interrupts with the Atari computers are for VBIs (Vertical Blank Interrupts) and DLIs (Display List Interrupts). These are very involved topics covered quite thoroughly in the book De Re Atari. VBIs are most often used for animation control, input handling, and other time-critical operations. For example, the entire player I/O of my game Eastern Front (1941) is handled by VBIs. The scrolling, giving of orders, identifying units, and so forth is all done by VBIs. The mainline routine meanwhile figures the artificial intelligence.

DLIs are used to enhance the graphics on the screen. You can get more colors, more use out of players, more scrolling, and more character sets with proper use of DLIs. Again, consult De Re Atari for a full treatment of this complex subject.

Interrupts are extremely difficult to debug because they tend to crash the system when they fail. You must exercise the strictest discipline in writing interrupt code. Timing problems, seldom of concern in mainline programming, can become critical with interrupts.

What happens, for example, if your interrupt service routine takes so much execution time that more interrupts arrive than you can service? Bad things, I assure you. You must always ask yourself, what happens if an interrupt strikes here? Or there? You must assume that an interrupt will strike at the worst possible time, and write your code to deal with that possibility.

The most important discipline to follow in writing interrupt service routines is this: keep your interrupt database separate from your mainline database. If the ISR can freely write to variables used by the mainline, you will certainly have problems when the mainline attempts to work with variables whose values change in unpredictable ways. You must set up ironclad rules about when the ISR can mess with variables used by the mainline, what it can do to them, and how it notifies the mainline routines that it has indeed altered them.

Approach interrupts with extreme caution. They are very powerful, but every programmer can tell you horror stories about debugging interrupt routines.

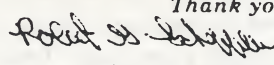
SOFTWARE
SUBMISSIONS
WANTED



MEGASOFT

MegaSoft LTD is the largest publisher of Commodore utilities in the U.S. and is currently expanding its lineup. We are looking for different and unusual utilities for the Atari system to be marketed on a national bases. Types of programs wanted would include copy utilities, printer goodies, bulletin boards, terminal packages, machine language helpers, and other unusual utilities. At this time ST software is preferred, however all submissions will receive an accurate evaluation. MegaSoft is interested in either an outright purchase or a royalty type based sale.

Thank you



Robert G. Scheffler
Software Development

MegaSoft

(206) 687-7176

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CIRCLE #127 ON READER SERVICE CARD

TRANSYLVANNIA / CRIMSON CROWN

Review

Jim Miller

In both of these adventure games, you are in Transylvania. They both include the mysterious stump, vampires, figures that appear (some helping, some down right annoying), strange underground places, Princess Sabrina (we add Prince Eric in Crimson Crown), Zin.

In **Transylvania**, you are asked by King John to search for his daughter (Sabrina) who has disappeared. You quickly find out that you have until 5 a.m. to find her and are reminded throughout the game what time it is. Time, being a factor, raises the blood pressure when you discover it is now 4 a.m. and you still have not opened the coffin nor found a cross, which you swear is in the cemetery (that is where it is in other versions of Transylvania).

My big clue to you is to read the letter from King John, the business card from Zin and, finally, the local newspaper, or you will never find the cross. How do you open the coffin? Well, you and the Werewolf will really love each other before 5 a.m. arrives.

In **Crimson Crown**, King John is dead and the Vampire has his magic crown. With help from Erik and Sabrina, you must find the crown. Again, read the journal and sealed Parchment.

An added twist to this game is that you must be able to solve at least four riddles. Fortunately, the sage gives you hints -- all in riddles, also.

Erik, heir to the throne, and Princess Sabrina are along to help you. Erik is a little frustrating at times. You ask Erik to help you and most of the time you are either ducking or looking out for your toes, because he gets a little wild with his sword.

You run into familiar surroundings in **Crimson Crown** that were in **Transylvania**. Both lands are out to get you: werewolves, vampires, witches, snakes, good old Sam, cats, bats, a blessed owl, trolls, Zin, Sages. Who is friendly and who is not?

Both games use **Comprehend** which has over 1,000 words. It understands you most of the time. You can type fairly long sentences as long as you leave out the word "and". Use commas, as in "open the door, drop the broom, take diamonds." You need to do a great deal of dropping and taking, because an inventory problem occurs and you cannot carry everything. A bag or a cloak is handy, though. (Whoops! Did I say that?)

You can save up to four games on each disk, and the support is good. You can write for a hint book. The hints in The Book of Adventure Games I and II by Schutte are not up to date. The games have been changed for the ST.

Crimson is definitely harder than **Transylvania**, but both are good. The pictures and text are nice. I would rate **Transylvania** a 7 and **Crimson Crown** an 8. When compared to King's Quest II (rated a 9), only the action is missing.

The only annoying thing in either game is that the type-ahead buffer does not always work. At times, not all of the characters are captured. Sometimes, the scrolling does not stop where you can type a response. You have to hit a return before you can type anything.

Crimson Crown and **Transylvania** are well worth the money and are very exciting. There is another game coming soon called **00-Topos** from the same company. Will get **00-Topos**.

NEWSLETTER HELP WANTED

Steve Billings

The PAC Newsletter needs your help. We need artwork for the cover and inside spaces. It doesn't have to be great stuff. All submissions will be considered. (This means kids too!) An important part of the newsletter is the drawings and Koala Pad pictures that spice it up. Please contribute, I am running out of inspiration. I don't want to have to resort to the boring pictures that come from Compuserve or other public domain sources.

Show me what great graphic machines you have out there. That goes for you fancy graphic 520ST owners, too! Submit your pictures in any form. Hardcopy screendumps or hand drawings are okay, or put it on disk and I will prepare it for the newsletter. Call me at 246-1751, or bring your submissions to the meeting. We need your help! See your work in print and impress your friends and shock your enemies. Our newsletters go all over the world, but don't be shy.

Maybe you can't write, but surely you can scribble. This is your chance to be a contributor to the best Atari newsletter there is. Give it a try.

ALTERNATE REALITY USER GROUP FORMED

Karen Leeds

March 12, 1986 -- Chatsworth, CA. IntelliCreations, Inc., announced today that as a result of the tremendous response to their recently released role-playing/fantasy game, **Alternate Reality-The City**, an Adventurers Club has been formed.

Anyone who has purchased the game is eligible to join the club at no cost simply by sending the warranty card from the game to the company.

A newsletter will be published on a bi-monthly basis and mailed to all club members. The newsletter will contain playing hints suggested by users, and will answer many of the questions the company has received in regard to game play, mapping, weapons, etc. A special feature of the newsletter is the section devoted to user contributions, including stories they have written about the characters they have developed.

Members of the club will be entitled to purchase an artist's rendering of The City, as well as special Alternate Reality T-shirts, and an upcoming issue will announce a special contest.

Said Sam Poole, IntelliCreations president, "We encourage everyone who is playing Alternate Reality to send in their warranty card and become a member of the club. The newsletter will contain many valuable game hints and make their playing even more enjoyable."

IntelliCreations, Inc., formerly H-P Software Productions, Inc., is located at 19808 Nordhoff Place, Chatsworth, CA 91311. Telephone is 818-886-5922.

[Here are a few excerpts from Issue 1 of **Alternate Reality Newsletter**. -- Editor]

"Be sure to always make a back-up of your character disk. That way, if your Level 9 character dies, you can still play with it. **Any** fast copy program for your computer will work for making these back-ups."

"The documentation says there are 14 Guilds in The City -- we goofed -- there are only 12. Sorry 'bout that."

"If you're diseased when you load your game, you have a defective disk. Send your game disks with your name and address and the reason for returning them to: Datasoft, Dept. B, 19808 Nordhoff Place, Chatsworth, CA 91311. We'll recut your disks at no charge."

PLANETFALL**Review**

Kevin Roethe and Peter Hoesly

Perhaps it was the flashy uniform and dark glasses on the 3D poster which first captured my interest. In bold letters, the poster exclaimed "JOIN THE STELLAR PATROL! Our reward is the opportunity to see the universe and to gain the respect of a thousand worlds" -- well, almost. I reminded myself of this every time I picked up my patrol-issue, self-contained, multi-purpose, all-weather scrub-brush and went to clean another toilet. After joining the Patrol, I had found myself assigned the exalted rank of an Ensign Seventh Class, a rank given less respect than the cook's food or a grotch-cage cleaner.

Aboard the ship **Feinstein**, I found myself cleaning the floor of the ninth level bulkhead under the supervision of the ever-present and demerit-happy First Class disease, which had obviously killed off the population. The only possibility of survival would be to find the cure using the help of my robot side-kick, Floyd.

Infocom rates **Planetfall** at a standard level of difficulty. Being such, we had little problem solving the game in one sitting, although it was an eleven-hour sitting using the combined power and intelligence of two ultra-powerful Atari computers. This program, we feel, would make a good first adventure for those entering the text adventure addiction, having elements of humor and challenging puzzles. An experienced text adventurer, however, would find this game somewhat challenging but could easily solve it.

The 8-bit version (for the 800, XL's, and XE's) and the ST version of **Planetfall** are very similar. The storyline is exactly the same. The ST version of **Planetfall**, however, is just a conversion of the 8-bit. The only use of the fine GEM operating environment is during the access to the disk drive for saving or restoring. A word of warning to those beginning adventurers with 8-bit Atari's: the old documentation does not include a list of possible commands. The solution is either to get them from another Infocom game or to memorize the list from the ST documentation while at the computer store. **Planetfall** is an older game; the parser, which takes the commands, and the vocabulary are reflective of its age, but this makes the game no less challenging.

SUPER BOULDER DASH

Review

Steve Billings

First of all, although I said I would try, I could not find a T-shirt transfer ribbon for my printer. Therefore, I have not been able to make a custom T-shirt using Robert Kabacy's program. I am determined to do so. Hopefully I will figure out a way to do it.

In the mean time I have been playing a new old game on my Atari 800XL. I was supposed to give a demo of **Boulder Dash** at the April meeting, but was aced out by Mr. X and the mystery man in black. Oh, well, I had quite a show in store for you, too. At the end of the demo a 50 ton boulder was supposed to fall off of the top of the new BPA tower and crash through the roof onto the stage. That was going to be my April Fool's joke. Sorry you missed it. I will try and think of something more clever for next year.

Boulder Dash has been around for a while, even though it was a game I personally had overlooked. It is sort of a maze type game that vaguely resembles **Dig Dug** only in the sense that you are digging tunnels underground. It is much better than **Dig Dug**, though, and if you like games similar to **Miner 2049er** or **Montezuma's Revenge** you will undoubtedly like **Boulder Dash**. The concept is that you must dig around the screen collecting the buried diamonds until you collect the required amount to go on to the next screen. Naturally, there are obstacles to your doing that.

You must be careful to avoid digging under buried rocks and dislodging them so that they fall on you. There is a science to it. A law of Physics, so to speak. If you observe when the rocks are secure and when they are in a position to fall, you can be prepared. There are other hazards, such as deadly butterflies and fireflies. Their touch is deadly, but their behavior is also predictable. Figure out the pattern and you will have a chance at getting past them.

Another denizen of the underground arena is the Amoeba. This green blob grows and grows as long as it has something to eat. It is not dangerous in itself, but sometimes must be contained before it contains you.

Each screen of the game is actually larger than the TV screen, and the field scrolls around very nicely as you approach the edge. The graphics and smoothness of the game are excellent.

The sharp-eyed among you may have noticed that this article is titled **Super Boulder Dash**! The new release of the game is again written by First Star Software, but is being distributed by Electronic Arts. The new version contains the original version with 16 different screens to conquer and also the new **Super Boulder Dash** on the reverse side of the disk with 16 more screens that are even more difficult than the first version. So even if you already have the first game and enjoyed it, you might want to check out the new Super version and continue your search for diamonds and glory under even more trying circumstances.

Electronic Arts has not been particularly benevolent to Atari and its legions, but I will have to admit that the stuff they do distribute is of excellent quality. Software for the Atari has been slack lately, but this is an attractive addition to the shelf.

I am thoroughly enjoying **Boulder Dash** and **Super Boulder Dash**. If you are looking for something that will keep you challenged and excited take a look at this one. I am sorry I overlooked it for so long.

Jim promised me another opportunity to demonstrate the game at the May meeting at the new location. Since I have pretty much said my piece here in the newsletter it will be primarily show and not much tell, but hope to see you there.

FOR YOUR INFORMATION

The February issue of the **PAC Newsletter** cost us \$565.80 to print 625 copies. The March issue cost \$488.10 for 640 copies. February's issue had 20 inside pages, and March's had 16. Together, they averaged about \$0.83 a copy. Please note that this cost is for printing only.

CLASSIFIED ADS

For Sale: Atari 800, ATR8000 with 64K and CP/M, SOROC IQ120 Terminal, two DS/DD drives, one SS/DD drive, Novation J-CAT Modem with auto-answer, and lots of software, including **Wordstar**, **SuperCalc**, and **dBASE II**. Asking \$650. Call Raymond Coon, 658-2252.

**ATARIWRITER+
PRINTER DRIVER FOR SG10
Bill Zinn**

[Reprinted from **ABACUS Newsletter**, March 1986, pages 3 and 4.]

Those of us with the Star SG10 printer have had some problems with the printer driver editor built into the otherwise excellent **ATW+**.

Thanks to John Skruch, Manager of XE Software at Atari, here are the codes for a working SG10 driver. It was developed by Eric Ginner, also of Atari. John assures me that it produces two column text if sufficient memory remains for the computer to format the text just before printing. The only problem: expanded condensed text will not print in column one.

Because Mr. Ginner's driver does not permit mixing NLQ and proportional fonts with other fonts in the same file, I have included an alternate set of codes for setting up the fonts in the driver editor. I have not had time to test either set on the 130XE to verify that they permit two column printing.

NOTE: SELECT and UP or DOWN ARROWS do not work for superscripts and subscripts. Control G codes are required. Also, when changing fonts within the file a <CTRL> G 1 should always be used to turn off super/subscripts, italics, double strike, (and proportional if using my alternate codes) before selecting another font.

Codes to Enter for Editor Prompts:

Initialize Every Line	blank
Line feed & CR	155
Underline off	27 45 0
Underline on	27 45 1
Backspace	8
Elongate off	27 87 0
Elongate on	27 87 1
Bold off	27 70
Bold on	27 69
Up 1/2 line	blank
Down 1/2 line	blank
Down 1/2 line & CR	blank
Return w/o LF	155
Font #1 Pica	27 84 27 53 27 72 27 66 1
Font #2 Condensed	27 66 3
Font #3 Proportional	27 112 1
Font #4 Superscript	27 83 0
Font #5 Subscript	27 83 1
Font #6 Elite	27 66 2
Font #7 Italics	27 52
Font #8 Double strike	27 71
Font #9 NLQ	27 66 4

The following alternate font codes turn of proportional with <CTRL> G1 and turn off NLQ whenever any of the other fonts are selected.

Font #1 Pica	27 84 27 53 27 72 27 112 0 18
Font #2 Condensed	27 66 5 27 66 3
Font #3 Proportional	27 66 5 27 112 1
Font #4 Superscript	27 66 5 27 83 0
Font #5 Subscript	27 66 5 27 83 1
Font #6 Elite	27 66 5 27 66 2
Font #7 Italics	27 66 5 27 52
Font #8 Double strike	27 66 5 27 71
Font #9 NLQ	27 66 4

BASIC XE NOTES
Downloaded from OSS BBS

BASIC XE Version 4.1 Bugs!

OSS has just discovered a bug in BASIC XE version 4.1: If you use EXP, LOG, CLOG, SIN, or COS in the TO part of a FOR loop [e.g., if you use FOR X=0 TO SIN(90)], the program will hang. They have a fix if you use the disk extensions, available by sending an SASE and requesting the "BXE FOR fix" program.

BASIC XE and Translator Disks

If you are trying to modify a BASIC program that needs a translator to run, here are some hints. The reasons that a program requires the translator disk usually fall into two categories:

1 Illegal calls into the OS ROMs -- ONLY the entry points in the areas \$D800 to \$DFFF and \$E400 to \$E462 area are "legal" JSR points. All hardware accesses from \$D200 to \$D40F (but be careful of accessing \$D301 on an XL or XE machine) are also OK.

2 Illegal use of low memory -- Machine language programs for use with BASIC can use zero page from \$CB to \$D1 and \$D4 to \$FF. Also, memory from \$680 to \$6FF is available. You can also probably use the cassette I/O buffer at \$3FD to \$47F. Any other memory access may not work properly on all machines.

COMPUTEROLA

239-4315

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Eidolon	31.00
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World's Greatest Football	31.00
<u>INFOCOM</u>	
Wishbringer	27.00
<u>ORIGIN SYSTEM</u>	
Ultima IV	45.00
<u>SUBLOGIC</u>	
Flight Simulator II	41.00

This is a short list of some the newest products available for the ATARI.
COMPUTEROLA still has access to many of the classic programs. Call for prices
and availability.

Atari 1050	160.00	Atari 130SE	120.00
Microbit Interface 1150	50.00	Panasonic 1091	270.00
Star SG-10	225.00	Atari XM301 Modem	45.00
Silver-Reed 400	240.00	1702-1802 Color Monitor	180.00
Zenith 123 Green or Amber	95.00	Atari 800XL	75.00
315 Color Printer (demo)	50.00	Colored Diskettes	15.00

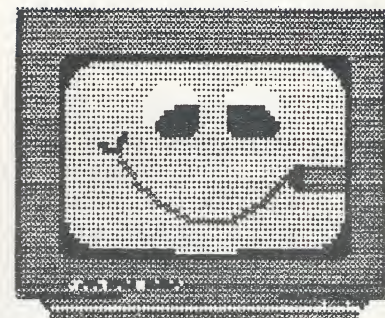
Okidata...Hayes...Novation...US Robotics...AND MORE.....CALL 239-4315

520 ST

Haba 10mb Harddisk	495.00	VIP Professional	80.00
Haba Business Letters	39.00	Mirage Express	39.00
Haba Writer	45.00	Hippo Almanac	29.00
Haba Wills	39.00	Unicorn HEX	31.00
Haba Hippo-C	60.00	Unicorn PC/InterComm	95.00
Haba Check Minder	55.00	****AND MORE****CALL 239-4315****	

ST SIG NEWS
R. DeLoy Graham

ST WORLD



The general ST SIG meetings for March were held on the 13th and 27th at Tektronix building 50. In attendance were about 40 members, including representatives of several local stores. Both meetings were lead by Pat Warnshuis.

On the 13th, Pat monitored a discussion of the relative merits of three programming languages -- C, Pascal, and Modula-2. Although no clear conclusions were drawn, the consensus seemed to be that Pascal (as implemented by OSS **Personal Pascal**) is a good choice for the beginner on the ST. Because Pascal is a predecessor to Modula-2, latter transition to its more powerful offspring should be easy once the basics of GEM programming are mastered. Programmers already familiar with C showed no intentions of programming in Pascal, but as yet they are having difficulty finding a desirable implementation of the C programming language. Pat expressed hope that **Lattice C** will provide a workable environment and may offer classes again with that implementation. Pat also mentioned that he is enjoying using the **HiSoft Assembler** for 68000 assembly programming and promises a review of that product.

Pat is helping Jerry Cole complete a very nice editor which they have made available to members of the ST SIG. They plan to market a more complete and debugged version. They are currently optimizing the code and adding "bells and whistles."

On the 27th, Pat shared with us several articles regarding the ST. The best news was that all ST machines will be upgradeable to any future add-ons, such as a graphics co-processor.

Kenneth Hurley, who produced and sold some of the first ST products on the market, is now also programming on the Amiga. He made the state-

ment that the ST is much more professionally put together than the Amiga.

FORTH programmers felt left out of the previous language discussion, so proponents were given equal time at this meeting. Pat first stated his reasons for believing C to be a better programming environment. He has professional experience in both languages. Tony Roth, who also has professional experience in both languages, then gave reasons for his approval of FORTH. Additional support came from Dave Skinner, an independent consultant who programs in FORTH, and from Mark Kimball, a Tektronix employee who demonstrated a stereo 3D display on a monochrome ST system. Although much of his previous work has been in assembly language, he wrote this program in FORTH. Of interest to beginning programmers, when asked how he approaches a programming problem, Mark said, "I think about it for a week." He also said that any good programmer can optimize his code, so superficial speed concerns, especially on the 68000, are of small concern. The real question is how fast one can loop through the development process. The programmer's language of choice, then, is whatever language he feels most comfortable with. Another consideration, though, is what kind of programming one is going to be doing. Someone made the comment that FORTH is fine if you are doing work for yourself, but if you want to work for others, C is the better choice.

New SIG groups are starting to form from the ST SIG. For several months a beginner's ST SIG has been meeting on the first and third Thursdays of each month. One of the other groups being formed will study Pascal and Modula-2, and another group will study business applications on the ST, starting with **dBMAN** and **VIP Professional**.

PERSONAL PASCAL
Hints, Notes, and Bugs
 Bob Re

[Reprinted from ABACUS Newsletter, March 1986, pages 12 and 13.]

If you are using **Personal Pascal** from OSS and you have a meg upgrade in your machine, then get a ramdisk program and create a ramdisk of 500K or so and copy the Pascal disk into it, together with your source code. Also, make sure that the temporary files are set to the ramdisk drive using the compile options. Your compiles and links will be amazingly fast.

For those of you like myself who only have 512K machines with TOS in ROM, you can still use a ramdisk to speed up compiling significantly. Using ramdisk software, create a ramdisk of about 250K and copy your source files into it. After loading Pascal, select the compile options from the menu and change the temporary file path to the drive letter of your ramdisk. Now when your compile, your drive will only be used for part of the compile, and the compiling will be much faster.

One last important note about compiling using a ramdisk needs to be mentioned. It is a good idea to save your source code to a disk before running a compiled program. If you do not, and the program locks up the system, you will have lost all of your work. Unfortunately, **Personal Pascal** does not allow you to save your file to another disk, so you have to exit Pascal and copy the file from the desktop. If you are just doing some minor changes, this step may not have to be done every time you make a change, but should be done every once in a while. If you have 1 meg in your machine and you are also putting the Pascal programs in memory, this will not be a problem since the programs will load from the ramdisk very fast.

If you own or plan to purchase **Personal Pascal**, you may be a little confused when reading through the GEM documentation in the manual. Do not despair. I too thought that using GEM would be an overly demanding task, but after a lot of experimentation (not all successful) and rereading the sections over and over again, more and more pieces began to fall into place. To this point, I have already pretty well mastered dialog boxes, and I am well on the way to mastering windows and event management. Though I have not used menus yet, they look like they will be a snap. I, for one, feel that OSS has done a very

respectable job of greatly simplifying the creation of GEM based applications.

Now the bad news. I have unfortunately found a couple of bugs in **Personal Pascal**. First of all, the Delete Dialog does not work and only causes your program to bomb out. I have let OSS know about this bug and they are looking into it. Also, you should not make the last item that you add to a dialog box an editable field, since pressing return when the cursor is in this field will crash the program. This is easily remedied by switching the order in which you add the items. This may not even be a bug in Pascal and may be coming from GEM. Regardless, it is easily worked around. Finally, though I am not positive, there may be a problem with the Set Window command. I will be in touch with OSS in the near future and will report any fixes next month.

PERSONAL PASCAL CORRECTIONS FROM OSS BBS

Rect_Intersect in GEMSUBS. The definition of the Rect_Intersect procedure was left out of the early versions of the GEMSUBS.PAS file. If you file is missing this declaration, please insert the following:

```
FUNCTION Rect_Intersect( x, y, w, h : integer ;
  VAR newx, newy, neww, newh : integer )
  : boolean ;
```

EXTERNAL ;
 into your GEMSUBS.PAS file.

Menu_Text in Pascal. Thanks to Richard Legault for the following bug fix. The declaration of the "Menu_Text" routine in GEMSUBS.PAS is not correct. The VAR in the definition of the menu text string should be deleted.

IO_Check and IO_Result. We blew it! If you want to use the IO_Check and IO_Result routines from within a Pascal program, you must declare the routines to be EXTERNAL, in order to let the compiler know about them. This gem of knowledge was inadvertently left out of the manual. Declare the routines like this:

```
PROCEDURE IO_Check( on : Boolean ) ;
  EXTERNAL ;
FUNCTION IO_Result : Integer ;
  EXTERNAL ;
```


WHY PASCAL?

R. DeLoy Graham

At the three high schools in the Beaverton School District, students are offered one semester courses in Computer Applications, Programming I, and Programming II. The two beginning programming courses use BASIC as the language for implementing the concepts taught. The second course deals with file processing on an Alpha Micro Computer (68000 based). We use Alphabasic, which is compiled, allows indenting and other formatting options, and does not require line numbers. Besides the above classes, we offer a one-year course in Advanced Placement Computer Science, a course designed to prepare students to take the College Board exam in Computer Science which is given yearly during the early part of May.

The College Entrance Examination Board provides curriculum guidance for a program of college-level courses and exams which make it possible for secondary school students, assuming they earn the required grade on the exam, to receive college credit and, in some cases, advanced standing when they begin college. These courses offer an in-depth study of various subjects, requiring more time and work, and thus a greater commitment on the part of the student.

The AP Computer Science course guides the student through a very challenging study of data structures and algorithms. Currently, the particular language which students use to implement these algorithms and data structures is Pascal, which was developed by Niklaus Wirth in 1970 as a vehicle for teaching the principles and methodology of structured problem solving and programming. Pascal is the dominant language taught and used at many universities; hence, it is the language of choice for the AP Computer Science course. Please note, however, that the course is not a study of Pascal but a study of computer science; Pascal is simply the language used in that study.

Because I teach the AP Computer Science course at Beaverton High School, I am very excited about **Personal Pascal** from OSS. Following the ISO Standard, **Personal Pascal** adds some of the popular extensions found in UCSD Pascal, including a predefined string type and several string functions. It also provides random access files and bitshifting. But most importantly, **Personal Pascal** gives the beginning ST programmer the easiest available interface to GEM.

After months of struggling with poorly documented implementations of C, I have now had much success with **Personal Pascal**, which will be my language of choice while I continue to learn how to work with the menu bar, alert boxes, dialog boxes, windows, and the mouse.

Personal Pascal makes the Atari ST a viable contender for the education market. Although it yet lacks some desirable functions, such as random number generating and cursor positioning functions for use when programming in TOS, the language provides an implementation of Pascal that is more than adequate for use in the AP Computer Science course and in most college and university programs. Furthermore, OSS promises more extensions and complete support.

I heartily recommend this language to students new to the ST. The manual included does not, however, teach Pascal. The following are texts which I have used and can recommend [at BHS we use the two Heath texts]:

1. Cooper, Doug, & Michael Clancy, Oh! Pascal!, W.W. Norton, 1983.
2. Dale, Nell, & David Orshalick, Introduction to Pascal and Structured Design, D.C. Heath and Co., 1983.
3. Dale and Lilly, Pascal Plus Data Structures, D.C. Heath, 1985.

PERSONAL PASCAL UPDATE

As of April 12, I have downloaded from OSS BBS over thirty pages of additional documentation for **Personal Pascal**, as well as source code for six sample programs. Included are Making Generic AES and VDI Calls and Writing Desk Accessories. OSS is also producing a series entitled Introduction to BIOS, XBIOS, and GEMDOS Calls. Completed sections available for downloading are Character Input and Output, Disk File Operations, Configuring the I/O Ports, and Time and Date Functions. Other articles to follow will cover sound generation, directories and paths, directory searching, graphics hardware, and miscellaneous topics. One of the programs is a patch which fixes a few bugs. I will be happy to make these documents and programs available to anyone interested.

SOLAPAK
A Review
R. DeLoy Graham

While scanning newsletters from other user's groups last month, I was attracted to an ad in Nybbles & Bytes, the official newsletter of the N.W. Phoenix Atari Connection. Tim Hunkler, one of their members, was advertising an ST program called **SOLASAVE** which shuts down the ST monitor when not in use to protect it from image "burn in". Being one who likes to leave the computer on for extended periods, I was hoping just such a product would come on the market, so I immediately sent for a copy of **SOLAPAK**, which includes **SOLASAVE** as well as a ramdisk and a true print spooler.

Within two weeks I had received my order. I quickly made a backup of the program. (Solar Powered Software's policy is to give the user unlimited right to make copies of its programs for personal use. The original and all copies carry a unique serial number that could be used to identify purchasers who violate copyright laws.) I then went through several pages of documentation which are stored in README and DOC files on the 3 1/2" disk. Finally, I booted up my new software.

SOLASAVE and **SOLADISK** are installed at bootup, during which the user is told the size of ramdisk that has been created. From the documentation I learned that a DEF file is used by the startup program to determine whether to create a ramdisk and, if so, what size to create, whether or not to install the **SOLASAVE** program, and how to initialize the print spooler options. Another method of installation is to have the program ask the user at bootup which options to include and what size of ramdisk to create.

With a color monitor, if neither the keyboard nor the mouse are touched within three minutes, **SOLASAVE** shuts the monitor down. Then, once every minute the screen is restored momentarily to remind you that the computer is still on. In the case of a monochrome monitor, **SOLASAVE** inverts the image.

The program has worked flawlessly so far. I have not noticed any slowing in keyboard or mouse response. It is written in assembly language and takes up very little memory. Most importantly, I now can leave my monitor on for extended periods without worrying about image "burn in".

SOLADISK can be configured to be any size up to 1 megabyte. Like any software ramdisk, a program containing non-relocatable code will likely cause the ramdisk to crash. Tim has also

included a free memory test program, which is extremely fast. It makes 16 passes through memory in about two and one-half minutes. (If that seems like a long time, you haven't used any of the BASIC memory test programs, which can take all night!)

The spooler uses the ramdisk to print documents in the background, allowing the user to continue with other work, including accessing disk drives. The user simply loads the files to be printed into the ramdisk, calls on the spooler desk accessory from the DESK menu, and follows several simple steps to queue up to eight documents in the spooler. Each document can be preceded by unique printer controls, which are chosen by selecting buttons in a dropdown window. Over forty buttons can be defined by the user to configure the controls to work with any printer. Four of the buttons can be programmed to select favorite combinations of printer controls. I found the instructions much easier to follow than those included with other printer configuration programs.

One of the features that impresses me most about **SOLAPAK** is its price. Although **SOLADISK** retails for \$20 and **SOLASAVE** for \$25, the cost for both programs in **SOLAPAK**, which also includes the print spooler, is only \$30. Actually, I paid just \$24 plus \$1 shipping by taking advantage of a special user's group offer.

Tim Hunkler is a design engineer employed by a major electronics firm in Scottsdale, Arizona. He has an extensive background in both hardware and software. He seems to be especially interested in fast machines and fast code. It was speed that brought him into the Atari world. Of the IBM PC he says, "Pretty stupid to use an 8088 when the 8086 has been available for years, too slow, hate I/O ports, too much money." Tim finds the Macintosh's 68000 nice, but feels that the MAC has too much disk activity, is too slow, and costs too much money. After waiting for the right computer, he suddenly bought both an Amiga and an Atari ST in August of last year, but sold the Amiga after about three months. Although he found it to be a great machine "for a hacker at heart," he concluded that "it doesn't have the commercial potential for software that the 520 does."

Tim expects to continue developing for the ST. His next project is a floating point coprocessor which he will hook up through the cartridge port.

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